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EXAMINER

KUBELIK, ANNE R

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/588,410	Applicant(s) WOLF ET AL.	
	Examiner ANNE KUBELIK	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 55,57-66 and 69-86 is/are pending in the application.
- 4a) Of the above claim(s) 73-81 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 55,57-66,69-72 and 82-86 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 55, 57-66, and 69-86 are pending.
2. This application contains claims 73-81 drawn to an invention nonelected without traverse in the response filed 18 August 2008. A complete reply to the final rejection must include cancellation of nonelected claims. See MPEP § 821.01.
3. The objection to claims 63 and 82 because of informalities is withdrawn in light of Applicant's amendment to the claims.
4. The objection to claims 66-69 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim is withdrawn in light of Applicant's amendment to the claims.
5. The rejection of claims 55-56, 62-65 and 72 under 35 U.S.C. 102(b) as being anticipated by Elmstrom et al (1981, Amer. Soc. Hort. Sci. 160:330-333) is withdrawn in light of Applicant's amendment to the claims.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
7. Claims 55, 57-66, 69-72 and 82-86 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the

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claimed invention. Due to Applicant's amendment of the claims, the rejection is modified from the rejection set forth in the Office action mailed 19 February 2009, as applied to claims 55-72 and 82-83. Applicant's arguments filed 18 August 2009 have been fully considered but they are not persuasive.

The claims are drawn to a genus of watermelon plants, wherein the plants have fruit that have elevated fructose or elevated sucrose contents, a reduced total sugar content, superior sweet taste characteristics, and that lack bitterness as compared to unspecified other watermelon plants.

The claimed genus includes two mutually exclusive claimed subgenera. Plants in which the average fructose content is 50% to 60% of the total soluble sugar cannot also be plants in which the average sucrose content is 65% to 75% of the total soluble sugar. Another subgenera is also claimed, plants in which the average fructose + sucrose content is 90% to 95% of the total soluble sugar; this subgenera includes plants that do not fall within either of the first two subgenera.

Thus, it appears that more than one gene is responsible for conferring elevated fructose and sucrose content on watermelon fruit. The specification describes no genes that are responsible for conferring elevated fructose and sucrose content on watermelon fruit. Further, the specification describes no genes that are responsible for a plant being devoid of bitterness or for having superior sweet taste characteristics. Thus, the specification describes no the structure(s) as being required for the recited functions of elevated fructose and sucrose content in watermelon fruit.

Further, a number of the claimed characteristics are affected by environmental conditions. In watermelon sugar content, including fructose, glucose and sucrose ratios and

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content, is affected by temperature and shading (Kano, 2004, J. Hort. Sci. & Biotechnol. 79:142-145; Fig 5-6) and irrigation rate (Leskovar et al, 2004, J. Hort. Sci. Biotechnol. 79:75-81; Table V). Total sugar contents, as well as percent sucrose and fructose contents, are affected by the year the plant was grown and storage conditions of the fruit (Chisholm et al, 1986, Hortsci. 21:1031-1033; Table 1), as well as the maturity of the fruit (Elmstrom et al, 1981, Amer. Soc. Hort. Sci. 160:330-333, Table 2).

None of the lines mentioned in Tables 2 and 3 appear to be available to the public.

One of skill in the art would not recognize that Applicant was in possession of the necessary common attributes or features of the genus of watermelon plants in view of the disclosed species.

Hence, Applicant has not, in fact, described watermelon varieties within the full scope of the claims, and the specification fails to provide an adequate written description of the claimed invention.

Therefore, given the lack of written description in the specification with regard to the structural and functional characteristics of the claimed compositions, Applicant does not appear to have been in possession of the claimed genus at the time this application was filed.

Response to Arguments

Applicant urges that there is a strong presumption of written description when the application is filed (response pg 7-8).

This is not found persuasive because Applicant has not described the structures required for the claimed functions; thus, Applicant has not provided a written description of the claimed invention.

Applicant urges that they have described the claimed watermelon plants, provided examples of the watermelons and methods of measuring the sugar content and methods of making the watermelon, referring to Tables 1 and 3 (response pg 8).

This is not found persuasive. None of the watermelon plants in Tables 2 or 3 are available, for example by deposit; thus, no species have been described. Methods of making do not describe product made; further, issues with respect to this teaching are discussed in the enablement rejection below. Methods of measuring do not describe the watermelon plants. As sugar content is affected by environmental conditions, as discussed above, the structural features (i.e., genes) that confer these traits must be described.

Ariad Pharmaceuticals, Inc. v. Eli Lilly & Co., 94 USPQ2d 1161 (Fed. Cir. 2010) at pg 1171:

For example, a generic claim may define the boundaries of a vast genus of chemical compounds, and yet the question may still remain whether the specification, including original claim language, demonstrates that the applicant has invented species sufficient to support a claim to a genus. The problem is especially acute with genus claims that use functional language to define the boundaries of a claimed genus. In such a case, the functional claim may simply claim a desired result, and may do so without describing species that achieve that result. But the specification must demonstrate that the applicant has made a generic invention that achieves the claimed result and do so by showing that the applicant has invented species sufficient to support a claim to the functionally-defined genus...

[M]erely drawing a fence around the outer limits of purposed genus is not an adequate substitute for describing a variety of materials constituting the genus and showing that one has invented a genus and not just a species.

8. Claims 55, 57-66, 69-72 and 82-86 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The rejection is repeated for the reasons of record as set forth in the Office action mailed 19 February

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2009, as applied to claims 55-72 and 82-83. Applicant's arguments filed 18 August 2009 have been fully considered but they are not persuasive.

The claims are drawn to a genus of watermelon plants, wherein the plants have fruit that have 60% average sucrose contents, 65% total soluble sugar or an average fructose + sucrose of at least 90%. The claims are also drawn to a method of making the plants.

The instant specification, however, describes the selection of watermelon lines with fructose or elevated sucrose contents, wherein the parent lines are an unspecified *Citrullus colocynthis* plant and an unspecified proprietary *C. lanatus* plant (pg 13, line 17, to pg 14, line 19) and wherein the parent lines are "the wild species of" *Citrullus* and unspecified commercial varieties (pg 20, lines 8-27).

The instant specification fails to provide guidance for what criteria are used to select plants for the initial breeding steps. Virtually no information is provided as to what properties the parent wild-type *Citrullus* plant and the *C. lanatus* plant should have.

The claims encompass producing F1 progeny of these crossing in which the F1 progeny have fruit in which the average fructose content is up to 60% of the total soluble sugar, the average sucrose content is up to 75% of the total soluble sugar or the total sucrose and fructose content is up to 95% of the total soluble sugar. The specification does not even teach this is possible - the paragraph spanning pg 13-14 indicates that several rounds of backcrossing and/or selfing were required to produce fruit with these characteristics - much less teach which wild-type *Citrullus* and *C. lanatus* lines would produce F1 progeny with these characteristics.

Claim 86 is drawn to a wild-type *Citrulus* X *Citrulis lanatus* hybrid with 60% average sucrose contents, 65% total soluble sugar or an average fructose + sucrose of at least 90%. The

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specification fails to teach such a plant and fails to teach which parent wild-type *Citrulus* and *Citrulis lanatus* plants to use.

Given the claim breath, unpredictability, and lack of guidance as discussed above, undue experimentation would have been required by one skilled in the art to develop and evaluate methods for producing the claimed plants.

Thus, the instant invention is not enabled.

Response to Arguments

Applicant urges that the claims have been amended (response pg 9).

This is not found persuasive because the amendments have not overcome the rejection.

Applicant urges that the procedures used are well known in the plant breeding art (response pg 9-10).

This is not found persuasive because the specification fails to disclose the starting materials. The criteria are used to select plants for the initial breeding steps are not taught. Virtually no information is provided as to what properties the parent wild-type *Citrullus* plant and the *C. lanatus* plant should have.

Applicant urges that at the time of filing individual breeding techniques were well known and they have provided the claimed watermelon; it was not known it was possible to produce the claimed plants (response pg 10).

This is not found persuasive. Applicant has provided no evidence that it was thought in the art to not be possible to produce watermelon plants with the claimed characteristics. The arguments of counsel cannot take the place of evidence in the record.

Applicant urges that a skilled breeder would have been able to produce the claimed watermelon plants (response pg 10).

This is not found persuasive because the specification fails to disclose the starting materials.

Applicant urges that the techniques were known and predictable (response pg 10).

This is not found persuasive because the specification fails to disclose the starting materials.

Applicant urges that the specification provides details of the steps and the progeny produced and sets forth information on the claimed plants, as well as describing the methods of obtaining the plants (response pg 11).

This is not found persuasive because the specification fails to disclose the starting materials.

Applicant urges that working examples are provided in Tables 2 and 3 (response pg 11).

This is not found persuasive. None of the plants in Tables 2 and 3 have been deposited; they are thus not available. Further, the specification does not describe the properties the parent wild-type *Citrullus* plant and the *C. lanatus* plant should have.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 55, 57-66, 69-72 and 82-86 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention. Dependent claims are included in all rejections. Due to

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Applicant's amendment of the claims, the rejection is modified from the rejection set forth in the Office action mailed 19 February 2009, as applied to claims 55-72 and 82-83. Applicant's arguments filed 18 August 2009 have been fully considered but they are not persuasive.

Claims 55, 57, 61, 71 and 85-86 are indefinite in their recitation of "average fructose content", claims 55, 58, 61, 71 and 86 are indefinite in their recitation of "average sucrose content" and claims 55, 59, 61, 71 and 86 is indefinite in its recitation of "average ... content of fructose and sucrose". Under what conditions are these averages determined? Kano (2004, J. Hort. Sci. & Biotechnol. 79:142-145) teaches that in watermelon sugar content, including fructose, glucose and sucrose ratios and content, is affected by temperature and shading (Fig 5-6).

Claim 70 is indefinite because many of the members of the Markush group are not tissue types, but rather are plant parts, and hence do not further define "tissue".

Response to Arguments

Applicant urges that paragraph 63 of the specification makes clear that one of skill in the art would understand that average content is a mean plus or minus the standard deviation when grown in stress-free cultivation (response pg 12).

This is not found persuasive. First, the paragraphs in the specification are not numbered. Applicant is requested to refer to pg and line of the specification as originally filed. The full paragraph, (pg 12, line 28, to pg 13, line 12) is as follows:

Total soluble sugar content in watermelon fruit can be estimated by measuring the total soluble content (BRIX) using refractometer. Accurate sugar profile is obtained using HPLC. It is to be understood that the sugar profile of the watermelon varieties according to the present invention represents the average amount of any specific sugar within a fruit crop produced by these varieties. The fruit crop may refer to fruit produced by a single plant, or, preferably, to the fruit crop produced by plant grown on a commercial scale. Thus, as used herein in the specification and in the claims section that follows, an average fructose content of at least 50% of the total soluble sugar, for example, represent the mean plus or minus standard deviation of the fructose content measured for a ripe watermelon crop obtained by stress free cultivation, at its peak sugar production. The sugar profile of

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the watermelon fruit is also influenced by the sampling method employed. As exemplified herein below, a set of experiments was performed to establish a sampling method providing minimum variation between samples. Parameters examined by this set of experiments included stage of fruit ripening; method of samples collection; sampling region within the fruit. As used herein, average sugar content refers to an average measured in samples collected from the middle part of a cut fruit (2-4 cm from the center).

The specification does not describe these stress free cultivation conditions. As the plants in Tables 2 and 3 appear to have been field grown, it appears that they were not grown in stress-free cultivation conditions, as it is impossible to control the weather.

Applicant urges that the specification describes where the sample was measured (response pg 12-13).

This is not found persuasive. Because the claimed features are affected by environmental conditions, a plant of one genetic make-up would be encompassed by the claim under one condition but not under another.

Applicant urges that the claim defines the tissue as plant tissue from leaves, pollen, etc (response pg 13).

This is not found persuasive because leaves, pollen, etc, are plant parts, not plant tissues. It is suggested that “tissue” in line 2 be replaced with --plant part--.

Claim Rejections - 35 USC §§ 102, 103

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. The following is a quotation of 35 U.S.C. 103(a), which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claim 84 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Elmstrom et al (1981, Amer. Soc. Hort. Sci. 160:330-333).

Elmstrom et al teach inbred watermelon lines (Dixielee and Calhoun Gray) in which the average fructose content of the fruit is at least 55% of the total soluble sugar, at least at some days after anthesis (Table 2). The prior art plants differ from the claimed plants only by their method of manufacture. However, the claimed method of making the watermelon plants would not distinguish them over the watermelon plants taught by the prior art, as the only claimed feature of the plants is that they are watermelon plants. See *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), which teaches that a product-by-process claim may be properly rejectable over prior art teaching the same product produced by a different process, if the process of making the product fails to distinguish the two products.

Claim Rejections - 35 USC § 103

14. Claims 55, 57-65, 72 and 84-85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elmstrom et al (1981, Amer. Soc. Hort. Sci. 160:330-333). The rejection is repeated for the reasons of record as set forth in the Office action mailed 19 February 2009, as applied to claims 55-65 and 72. Applicant's arguments filed 18 August 2009 have been fully considered but they are not persuasive.

The claims are drawn to inbred and hybrid watermelon lines in which the average fructose content is up to 60% of the total soluble sugar, the average sucrose content is up to 75%

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of the total soluble sugar or the total sucrose and fructose content is up to 95% of the total soluble sugar.

Elmstrom et al teach inbred watermelon lines (Dixielee and Calhoun Gray) in which the average fructose content of the fruit is at least 55% of the total soluble sugar, at least at some days after anthesis (Table 2). The plants would have been grown from seeds. A plant regenerated from a tissue culture of these lines would be identical to these lines.

Elmstrom et al do not teach watermelon lines in which the average fructose content is up to 60% of the total soluble sugar or in which the average sucrose content is up to 75% of the total soluble sugar or in which the total sucrose and fructose content is up to 95% of the total soluble sugar.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to breed for watermelon lines with fruit in which the average fructose content is up to 60% of the total soluble sugar, the average sucrose content is up to 75% of the total soluble sugar or the total sucrose and fructose content is up to 95% of the total soluble sugar, using the lines taught by Elmstrom et al as a starting point. One of ordinary skill in the art would have been motivated to do so because Elmstrom et al teach the importance of selecting watermelon lines for high fructose levels to get sweeter fruit (pg 332, right column, ¶2). Further, one of skill in the art would have been motivated to select lines with high sucrose content, as sucrose also confers sweetness to fruit and quality to the fruit (pg 330, right column, ¶1).

Response to Arguments

Applicant urges that one of skill in the art would not have had a reasonable expectation of success in obtaining the claimed watermelon plants; Elmstrom was published in 1981 and no one has produced the claimed watermelon plants since (response pg 14 and 15).

This is not found persuasive. In response to applicant's argument based upon the age of the references, contentions that the reference patents are old are not impressive absent a showing that the art tried and failed to solve the same problem notwithstanding its presumed knowledge of the references. See *In re Wright*, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977).

Applicant urges that prior to Applicant's teachings one of skill in the art would not have been motivated to use a wild-type *Citrulus* to obtain fruit with higher sugar content, as wild-type *Citrulus* is bitter (response pg 14-15).

This is not found persuasive because the claims are not limited to plants in which a wild-type *Citrulus* is one of its parents.

15. Claims 66 and 82-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elmstrom et al as applied to claims 55, 57-65, 72 and 84-85 above, and further in view of Robinson et al (1999, J. New Seeds 1:1-47). The rejection is repeated for the reasons of record as set forth in the Office action mailed 19 February 2009, as applied to claims 66-68 and 82-83. Applicant's arguments filed 18 August 2009 have been fully considered but they are not persuasive.

The claims are drawn to inbred and hybrid watermelon lines with fruit in which the average fructose content is up to 60% of the total soluble sugar, the average sucrose content is up to 75% of the total soluble sugar or the total sucrose and fructose content is up to 95% of the

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total soluble sugar, and such plants into which genes for disease resistance and/or male sterility has been introduced by breeding.

The teachings of Elmstrom et al are discussed above. Elmstrom et al do not teach watermelon lines into which genes for disease resistance or male sterility has been introduced by breeding.

Robinson et al teach the importance of producing hybrid cucurbits, including watermelon (pg 2, 5, 13, 36), genes for disease resistance, including from watermelon (pg 8), genes for male sterility, including from watermelon (pg 32), and production of triploids and tetraploids (pg 33-34).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the method of watermelon plants as taught by Elmstrom et al, to introduce genes for disease resistance or male sterility by breeding as described in Robinson et al. One of ordinary skill in the art would have been motivated to do so because such genes would allow that plants to grow in areas with high disease rates, or to aid in breeding. One of ordinary skill in the art would have been motivated to introduce the trait by single gene conversion because that would allow the fruit to retain all the other desirable characteristics, like sweetness, and lack of bitterness.

Response to Arguments

Applicant urges that Robinson does not remedy the deficiencies of Elmstrom (response pg 15).

This is not found persuasive because Elmstrom makes obvious watermelon plants with elevated soluble sugars as discussed above.

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16. Claims 66 and 69-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elmstrom et al as applied to claims 55, 57-65, 72 and 84-85 above, and further in view of Zhong et al (2002, US 2002/0073445). The rejection is repeated for the reasons of record as set forth in the Office action mailed 19 February 2009, as applied to claims 66-71. Applicant's arguments filed 18 August 2009 have been fully considered but they are not persuasive.

The claims are drawn to inbred and hybrid watermelon lines in which the average fructose content is up to 60% of the total soluble sugar, the average sucrose content is up to 75% of the total soluble sugar or the total sucrose and fructose content is up to 95% of the total soluble sugar, and such plants into which genes for disease resistance or male sterility has been introduced by transformation.

The teachings of Elmstrom et al are discussed above. Elmstrom et al do not teach transformation of watermelon.

Zhong et al teach transformation of watermelon (§106, claims 6-7), including with genes that alter sugar content (claims 15-16, 25, 27), as well as tissue culture of shoot regenerable cells of a watermelon plant (§106).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the watermelon plants as taught by Elmstrom et al, to introduce genes for disease resistance or male sterility by transformation as described in Zhong et al. One of ordinary skill in the art would have been motivated to do so because of the suggestion of Zhong et al to do so (§57).

Response to Arguments

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Applicant urges that Zhong does not remedy the deficiencies of Elmstrom (response pg 16).

This is not found persuasive because Elmstrom makes obvious watermelon plants with elevated soluble sugars as discussed above.

17. Claim 86 is free of the prior art, given the failure of the prior art to teach or suggest a wild-type Citrus X Citrus lanatus hybrid with the claimed sugar content.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne R. Kubelik, Ph.D., whose telephone number is (571) 272-0801. The examiner can normally be reached Monday through Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg, can be reached at (571) 272-0975.

The central fax number for official correspondence is (571) 273-8300.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the

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problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

May 4, 2011

/Anne R Kubelik/

Primary Examiner, Art Unit 1638